GATES LEARJET CORPORATION

maintenance manual

CHAPTER

26

FIRE PROTECTION

RECORD OF TEMPORARY REVISIONS

Rev. No.	Date Inserted	Date Removed	Page Number	Rev. No.	Date Inserted	Date Removed	Page Number
26-1	Mar 27/78	Apr 30/82. Rev #14	26-20-00 Pg 2				

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26-Record of Temp. Revisions		Apr 30/82
*26-List of Effective Pages	1	May 25/84
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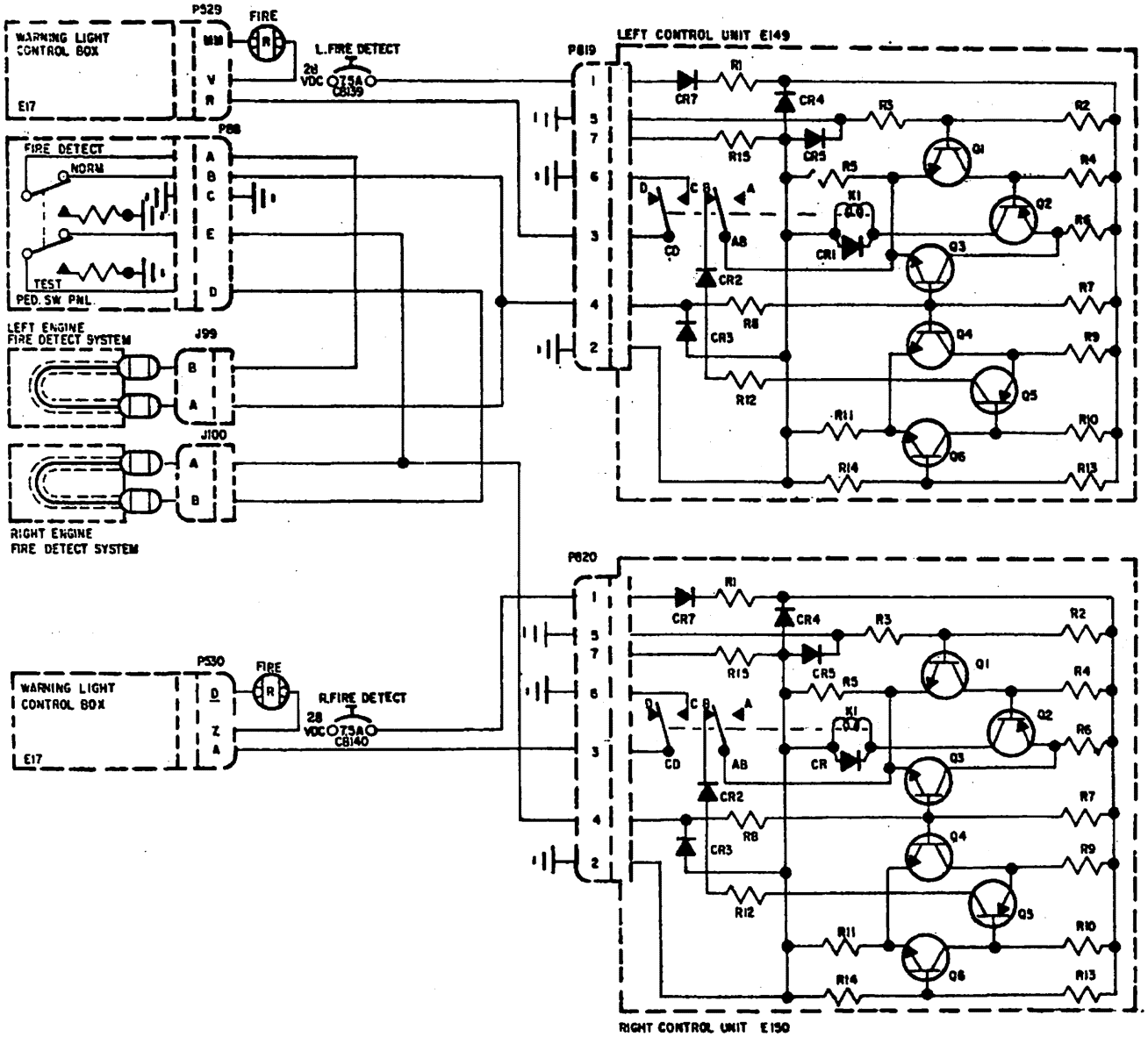
GENERAL - DESCRIPTION AND OPERATION

1. General
 A. Aircraft fire protection consists of a detection and an extinguishing system.
 B. Engine fire detection is accomplished by sensing elements in each engine area and is indicated by the fire warning lights on the glare-shield.
 C. Engine fire extinguishing is provided by two fire extinguishing bottles. The contents of both bottles may be discharged to either engine or one bottle to each engine.
 D. A portable, hand operated, fire extinguisher is mounted on the cabin floor under the copilot seat.

DETECTION - DESCRIPTION AND OPERATION

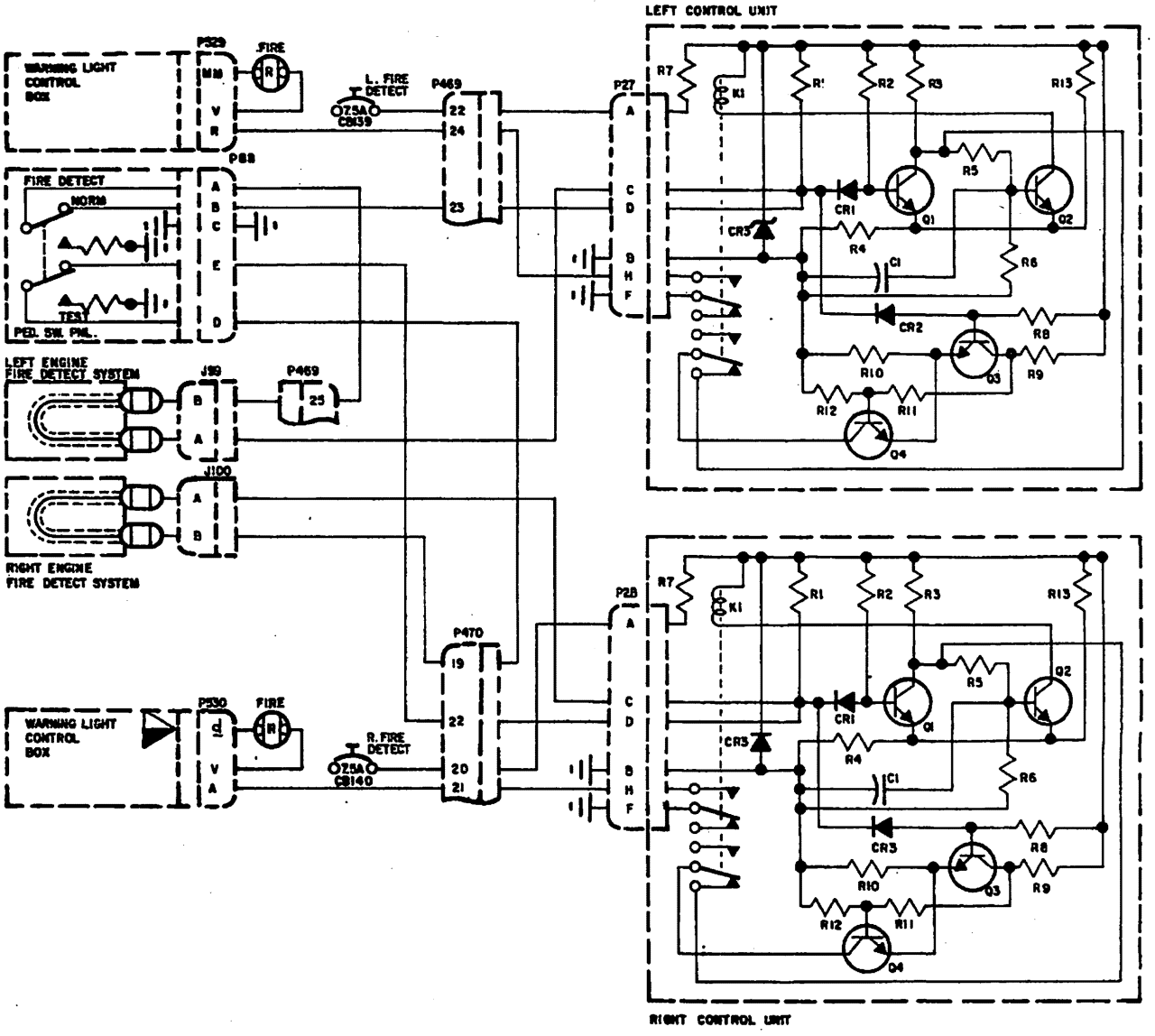
1. General
 A. The engine nacelles are equipped with a fire detection warning system. The system consists of two control units, two sensing elements in each engine area and two warning lights. The sensing elements in the engine area are connected in series to form a sensing element assembly.
 B. A control unit, installed for each fire detection system, monitors sensing element resistance. If sensing element resistance drops below 350 ohms the control unit energizes the FIRE warning light. A fire detect test switch is used to check system operation. With the test switch set to TEST, a resistance is connected in the circuit. This resistance, simulating an engine fire, lights the FIRE warning lights.
 C. On Aircraft certified for operation in Australia, an aural warning will sound when the FIRE warning lights are illuminated. On Aircraft which have incorporated AAK77-13, a FIRE-MUTE-NORM Switch is provided to interrupt the aural fire warning. The FIRE-MUTE-NORM Switch is located in the lower RH corner of the pilot's instrument panel.
 D. On Aircraft certified for operation in the United Kingdom, an aural warning will sound and the master warning light will illuminate when the FIRE warning light is illuminated.

2. Description
 A. The fire detection sensing element assemblies are located in each engine nacelle. One element is installed around the engine tailcone, and the other is installed around the inside of the nacelle.
 B. The fire detection control units are installed in the aft tailcone section. The LH control unit is located on the LH electrical equipment tray and the RH control unit is located on the RH electrical equipment tray.



Aircraft Equipped with McGraw Edison Fire Detect System

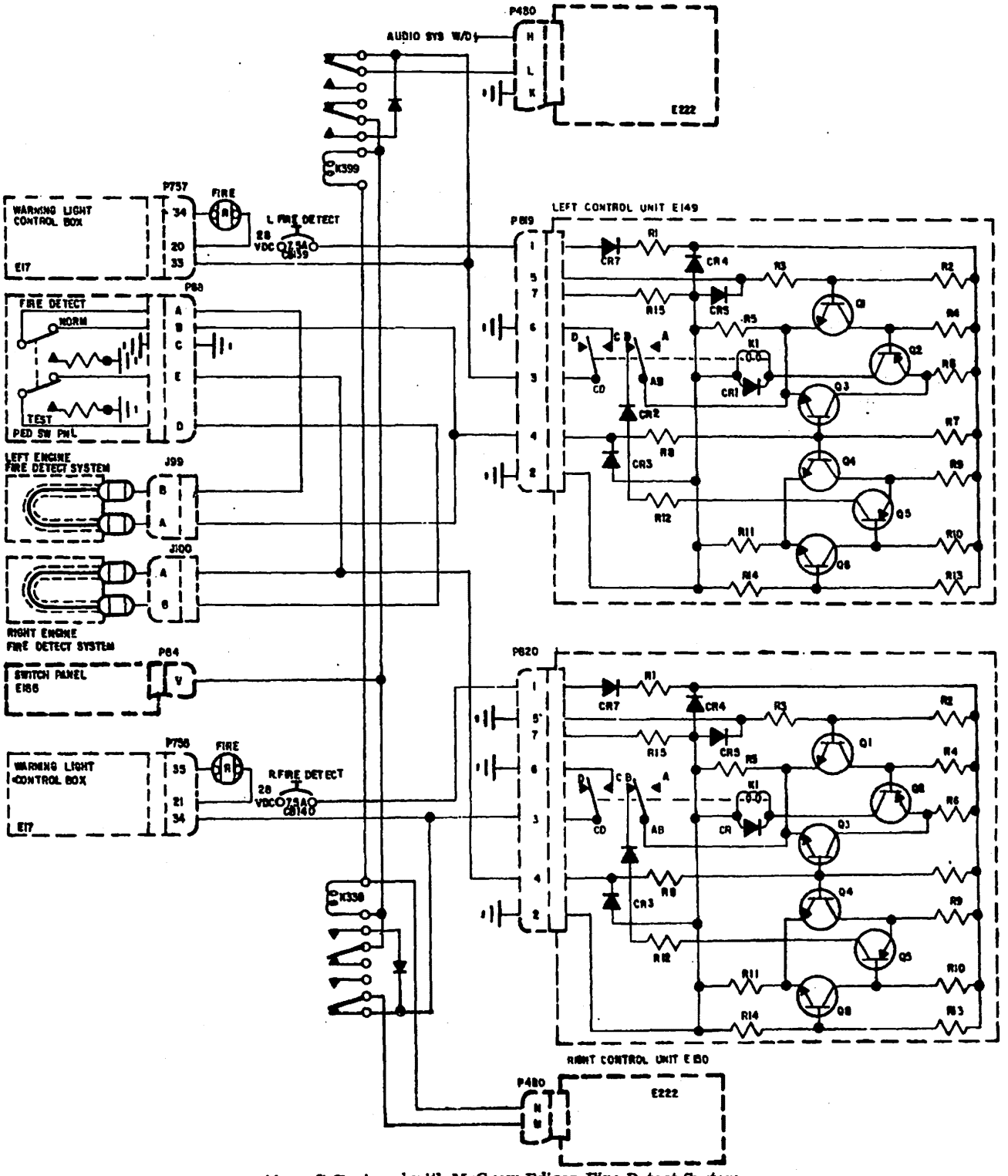
Engine Fire Detection System Electrical Control Schematic
Figure 1 (Sheet 1 of 2)



▶ Aircraft 25-070 thru 25-080 use pin MM in lieu of d.

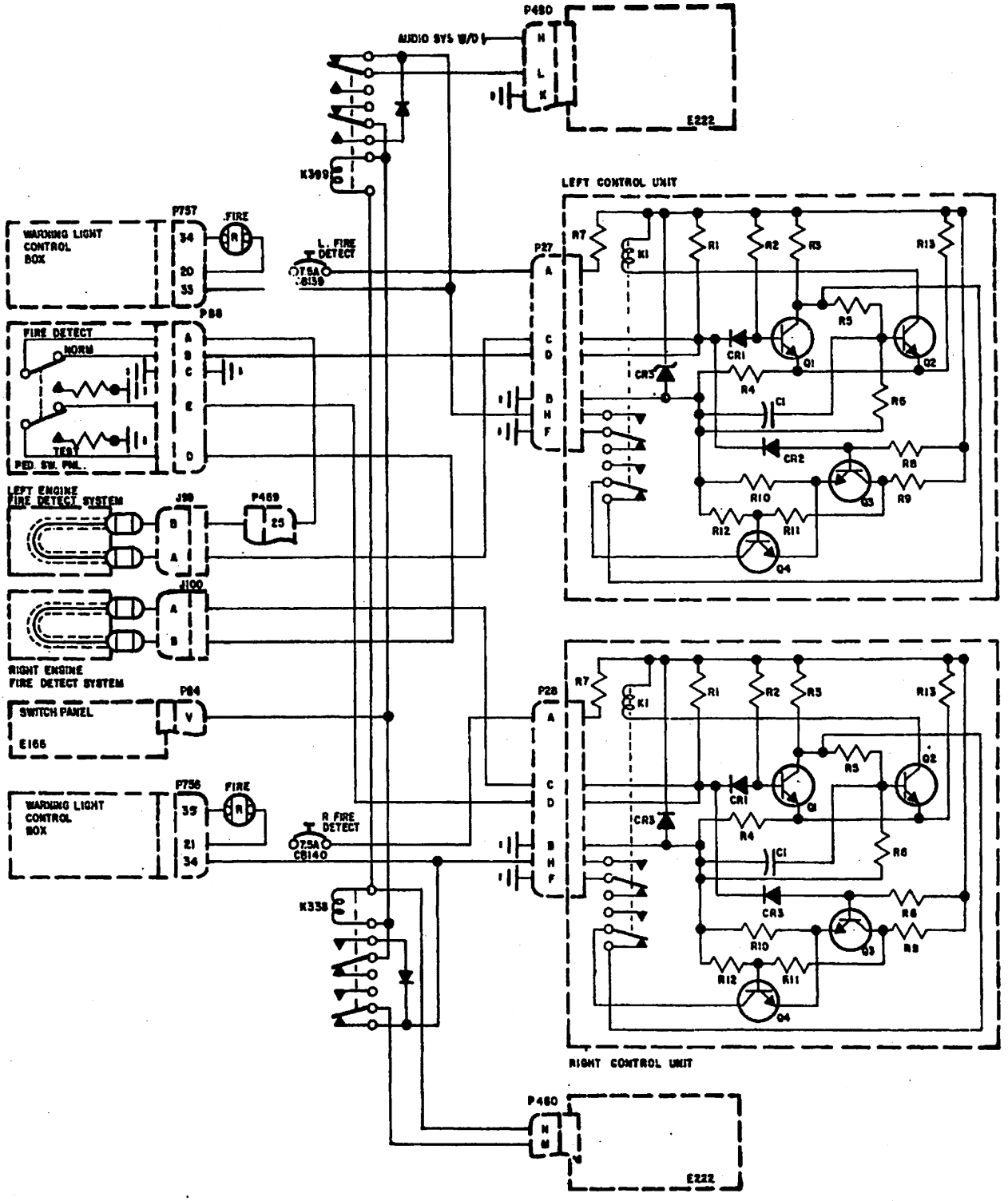
Aircraft Equipped with Walter Kidde Fire Detect System

Engine Fire Detection System Electrical Control Schematic
Figure 1 (Sheet 2 of 2)



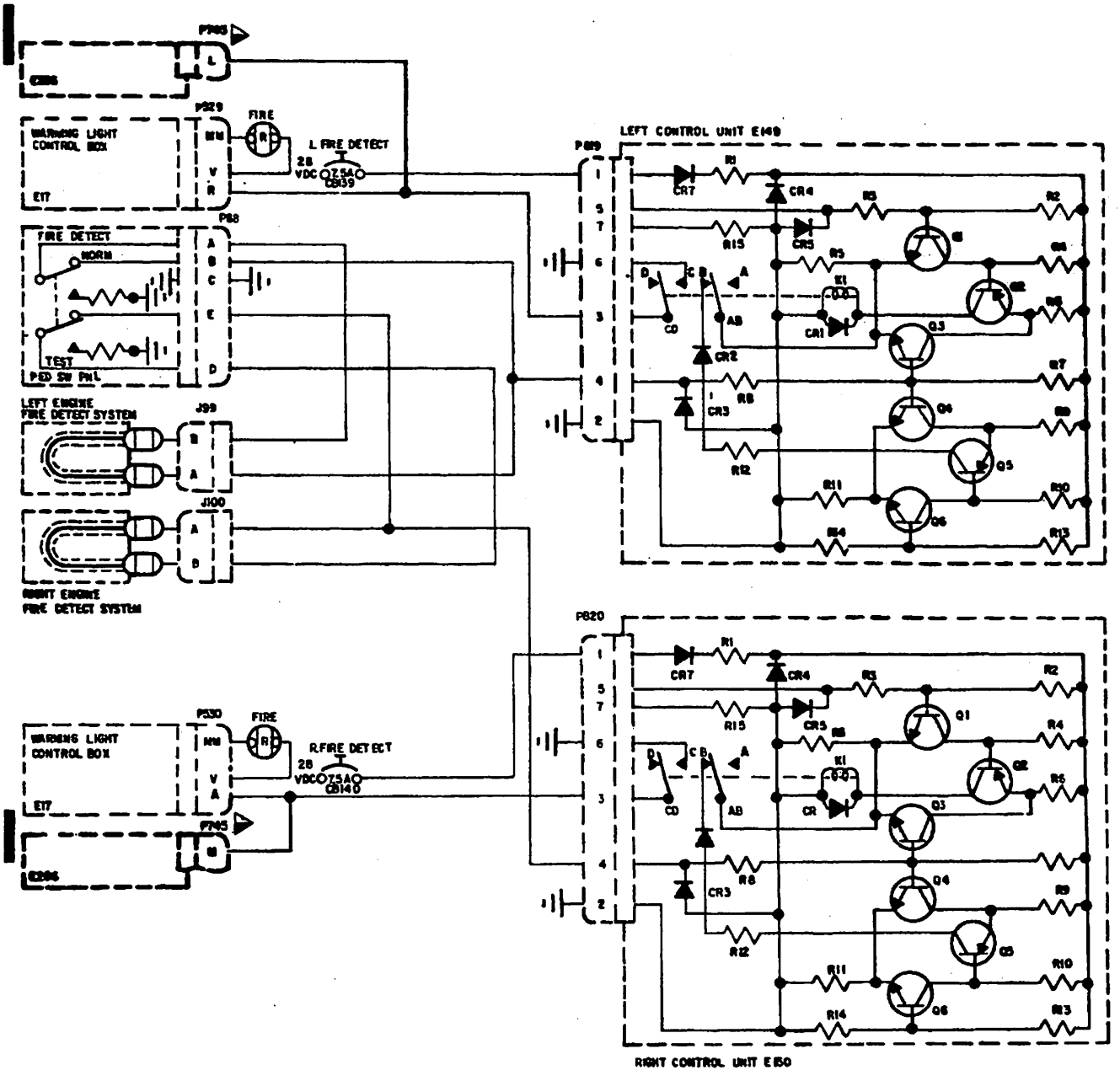
Aircraft Equipped with McGraw Edison Fire Detect System

Engine Fire Detection System Electrical Control Schematic
Figure 2 (Sheet 1 of 2)



Aircraft Equipped with Walter Kidde Fire Detect System

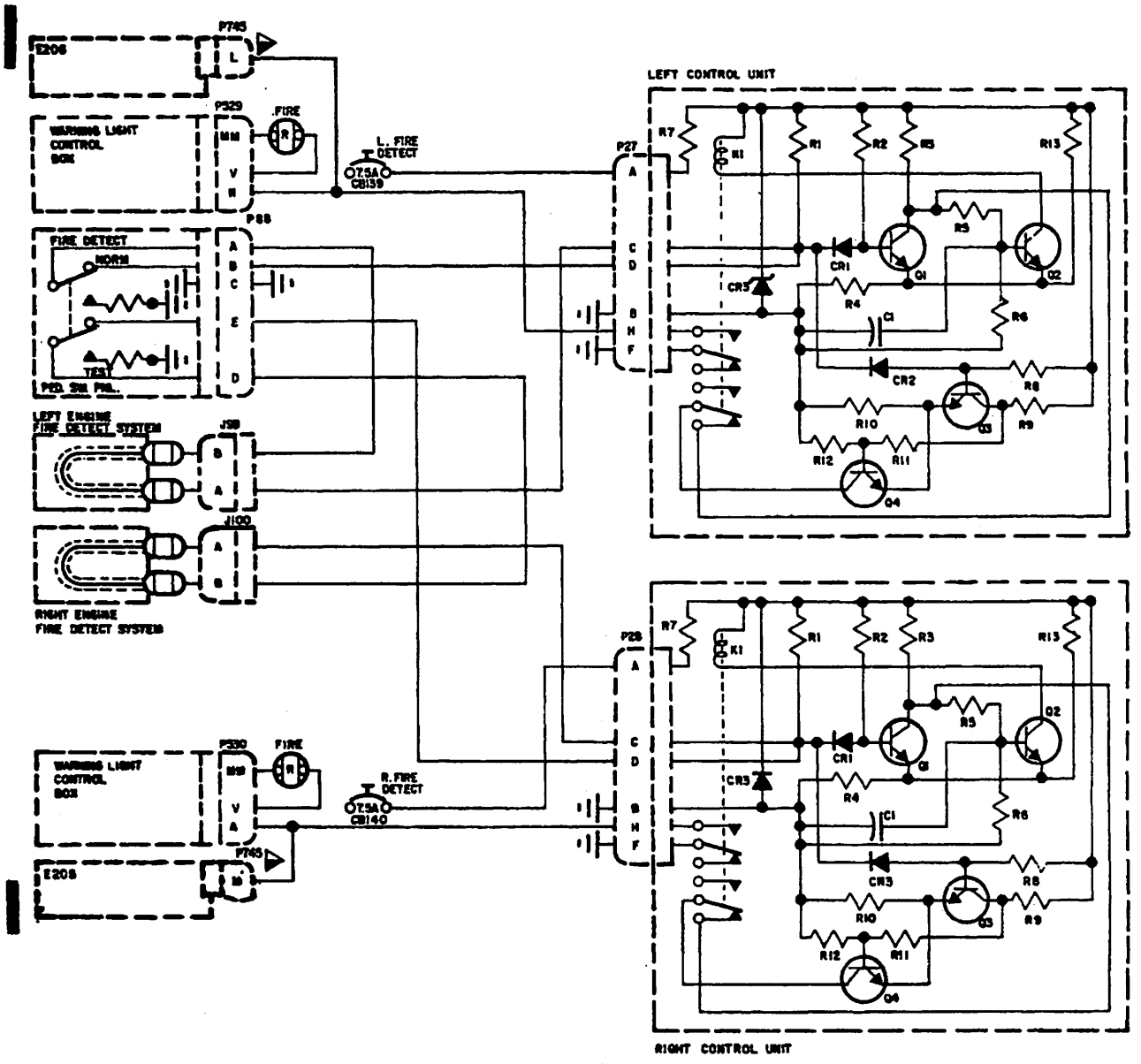
Engine Fire Detection System Electrical Control Schematic
Figure 2 (Sheet 2 of 2)



Aircraft Equipped with McGraw Edison Fire Detect System

▶ P745 becomes 2P745 on Aircraft Modified per AAK77-13

Engine Fire Detection System Electrical Control Schematic
Figure 3 (Sheet 1 of 2)



Aircraft Equipped with Walter Kidde Fire Detect System

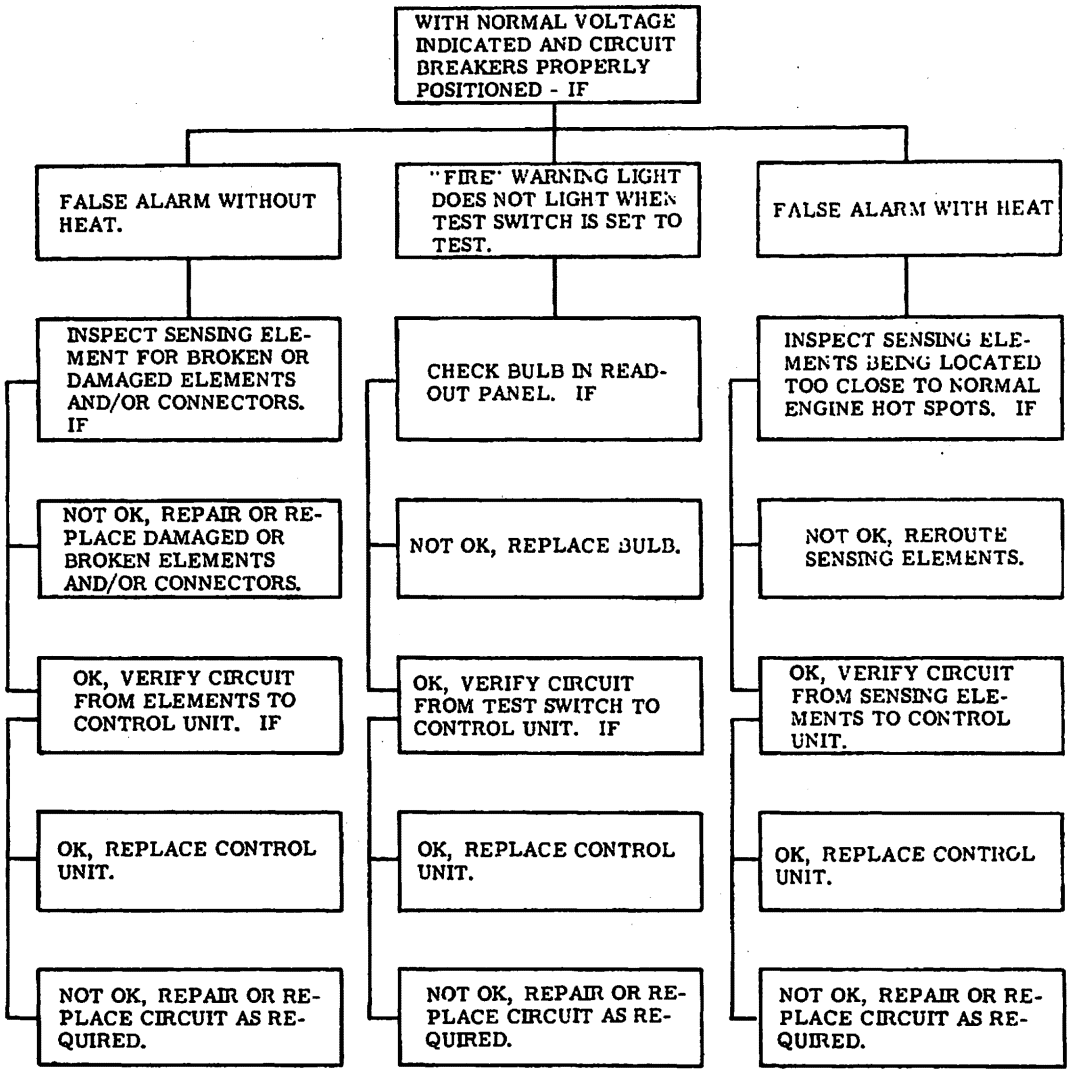
▷ P745 becomes 2P745 on Aircraft Modified per AAK77-13

Engine Fire Detection System Electrical Control Schematic
Figure 3 (Sheet 2 of 2)

DETECTION - MAINTENANCE PRACTICES

1. General
 A. Maintenance practices of the detection system consists of replacement of a defective component.

2. Trouble Shooting
 A. See figure 201 for trouble shooting procedures.
 (1) This figure is provided as an aid in isolating troubles in the fire detection system.



Fire Detection System Trouble Shooting
Figure 201

FIRE DETECTION SENSING ELEMENT - MAINTENANCE PRACTICES

1. General

A. Each engine nacelle fire sensing element assembly consists of two segments. The element is attached to the nacelle by hinge-type clamps. The outer part of the element is Inconel metal tubing which encloses a thermistor core (a ceramic material) containing internal wires. During standby conditions, a small difference in potential is applied across the thermistor. The ceramic material has a negative coefficient of resistance with respect to temperature. The electrical resistance decreases as temperature increases. During normal ambient temperature, the core resistance is relatively high and there is small current flow across the core. An increase in heat produces a decrease in resistance of the ceramic material allowing increased current flow. This signal is applied to the fire detection system control unit.

B. Fire detection sensing element removal and installation procedures are typical for both engines.

2. Removal/Installation

A. Remove Fire Detection Sensing Element (See figure 201)

NOTE: Use extreme care during removal not to twist, kink or dent sensing element.

(1) Disconnect sensing element at connectors.
(2) Using a screwdriver, turn the screws on the hinge type clamps until clamp releases.
(3) Carefully remove sensing elements.

B. Install Fire Detection Sensing Elements (See figure 201)

CAUTION: CAREFUL ATTENTION SHOULD BE PAID TO ELEMENT ROUTING THOUGH ITS ATTACHING CLAMPS. THE ELEMENT SHOULD BE CENTERED IN THE CLAMP OR GROMMET THROUGHOUT ITS LENGTH. IT IS NOT ENOUGH THAT IT HAS CLEARANCE FROM THE CLAMP. IT SHOULD EXERT EQUAL PRESSURE ON THE SPRING OR GROMMET IN ALL DIRECTIONS WHEN PASSING THROUGH A CLAMP. ANY TENDENCY TO PRESS THE GROMMET AGAINST THE CLAMP IN ONE DIRECTION COULD EVENTUALLY CAUSE A FALSE FIRE WARNING. USE EXTREME CARE NOT TO TWIST KINK OR DENT SENSING ELEMENT.

(1) Position element, with grommets attached, in hinge clamp.

(2) Close hinge clamp assuring that element and grommet is centered in clamp. Turn screw in clamp securing clamp in place.
(3) Connect sensing element connectors.

3. Inspection/Check
A. The following procedures are provided as an aid in determining the condition of the fire detection sensing elements. These procedures may also be used on new elements prior to installation.
B. Resistance checks are to be performed on elements with the elements stabilized to ambient temperature. Therefore the engine must be cooled completely.
C. Tools and Equipment

NAME	PART NO.	MANUFACTURER
Megohmmeter	Model L-7 or L6B	Industrial Instruments Inc. Cedar Grove, N.J.

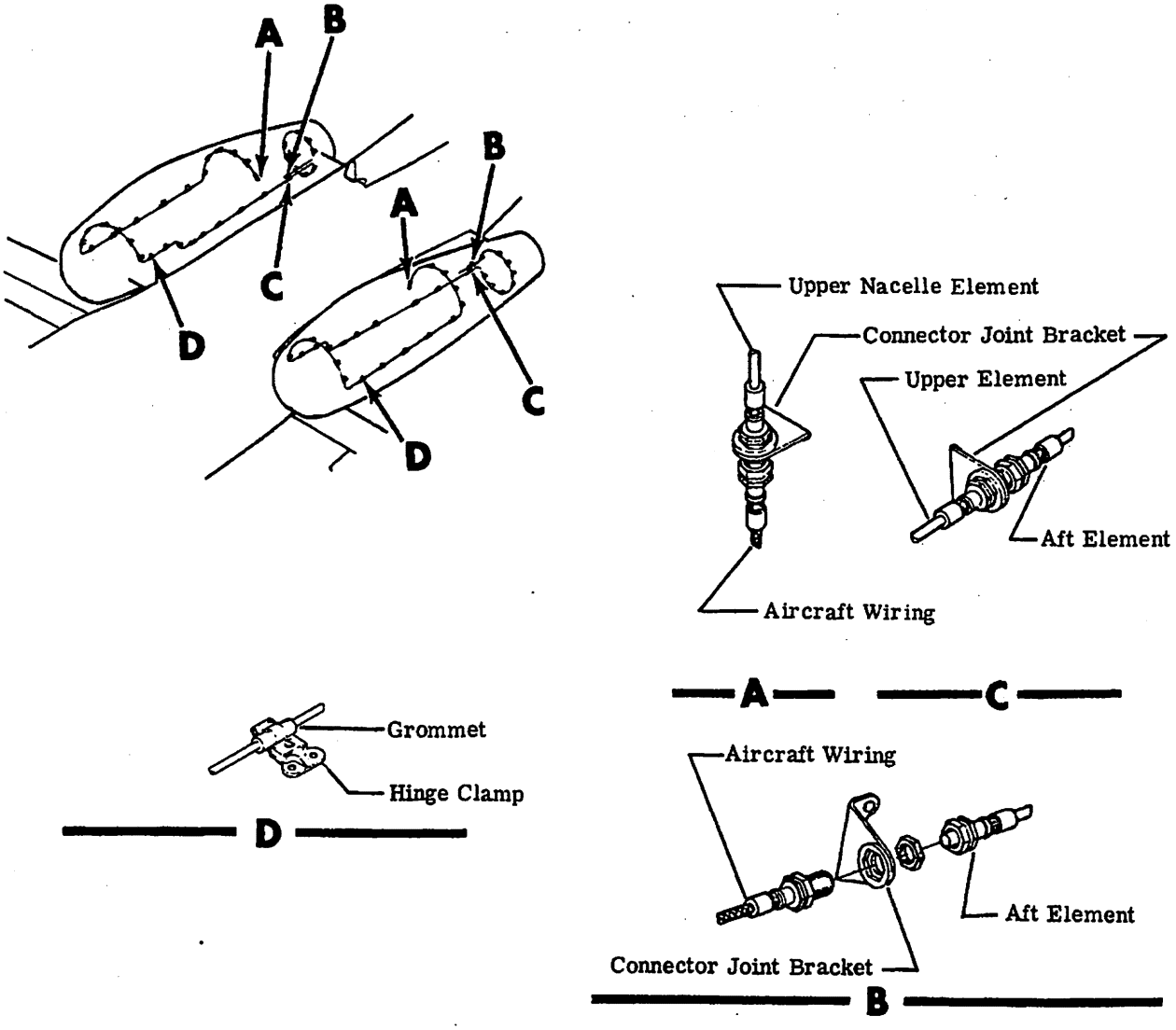
D. Inspection/Check
(1) Perform inspection/check of McGraw-Edison Fire Detect Sensing Elements.
(a) Remove lower engine nacelle to gain access to sensing elements.
(b) Disconnect sensing elements to be tested at connectors.

NOTE: There is no need to remove the elements from the aircraft for testing.

(c) Inspect the center pins and contacts at the end of the sensing element to see that they are properly centered. Inspect for foreign material and/or contamination in the recesses around the pins and contacts.
(d) Connect ohmmeter from the center pin on one end of the element to the center pin on the other end of the element. The forward conductor resistance for the firewall element shall not exceed 8.7 ohms. The aft conductor or resistance for the tailcone element shall not exceed 2.9 ohms.
(e) Connect megohmmeter positive lead to the element center pin and negative lead to the element sheath.
(f) Apply 100 vdc test voltage and take instrument readings as soon as it stabilizes (not to exceed 20 seconds after first application of test voltage). Minimum resistance reading for the forward and aft elements is 1.4 megohms.

NOTE: Any sudden or momentary shifts in instrument reading are indicative of breakdown.

(g) Replace sensing elements which have a lower resistance reading than those specified in step (f).
(h) Replace sensing elements which have an indication of breakdown.
(i) Connect sensing elements to aircraft wiring.
(j) Install lower engine nacelle.



Fire Detection Sensing Element Installation
Figure 201

(2) Perform inspection/check of Walter Kidde Fire Detect Sensing Elements

(a) Remove lower engine nacelle to gain access to sensing elements.

(b) Disconnect sensing elements to be tested at connectors.

NOTE: There is no need to remove the elements from the aircraft for testing.

(c) Inspect the center pins and contacts of the end of the sensing element to see that they are properly centered. Inspect for foreign material and/or contamination in the recesses around the pins and contacts.

(d) Connect ohmmeter from the center pin on one end of the element to the center pin on the other end of the element. The forward conductor resistance for the firewall element shall not exceed 14.8 ohms. The aft conductor or resistance for the tailcone element shall not exceed 5.0 ohms.

(e) Connect megohmmeter positive lead to the element center pin and negative lead to the element sheath.

(f) Refer to Table I for test voltage and minimum resistance. Apply test voltage and take instrument reading as soon as it stabilizes (not to exceed 20 seconds after first application of test voltage).

NOTE: Any sudden or momentary shifts in instrument reading are indicative of breakdown.

(g) Replace sensing elements which have a lower resistance than those indicated in Table I or which have an indication of breakdown.

(h) Connect sensing elements to aircraft wiring.

(i) Install lower engine nacelle.

ELEMENT	TEMPERATURE (°F)	TEST VOLTAGE	MINIMUM RESISTANCE
Aft Nacelle Element (P/N 872281)	68°	350 - 500 vdc	1.640 megohms
	72°	350 - 500 vdc	1.450 megohms
	76°	350 - 500 vdc	1.276 megohms
	80°	350 - 500 vdc	1.120 megohms
	84°	350 - 500 vdc	.990 megohms
	88°	350 - 500 vdc	.868 megohms
	92°	350 - 500 vdc	.762 megohms
	96°	350 - 500 vdc	.670 megohms
	100°	350 - 500 vdc	.590 megohms
Forward Nacelle Element (P/N 875135)	68°	350 - 500 vdc	.3876 megohms
	72°	350 - 500 vdc	.3403 megohms
	76°	350 - 500 vdc	.3000 megohms
	80°	350 - 500 vdc	.2663 megohms
	84°	350 - 500 vdc	.2346 megohms
	88°	350 - 500 vdc	.2063 megohms
	92°	350 - 500 vdc	.1827 megohms
	96°	350 - 500 vdc	.1611 megohms
	100°	350 - 500 vdc	.1422 megohms

TABLE I

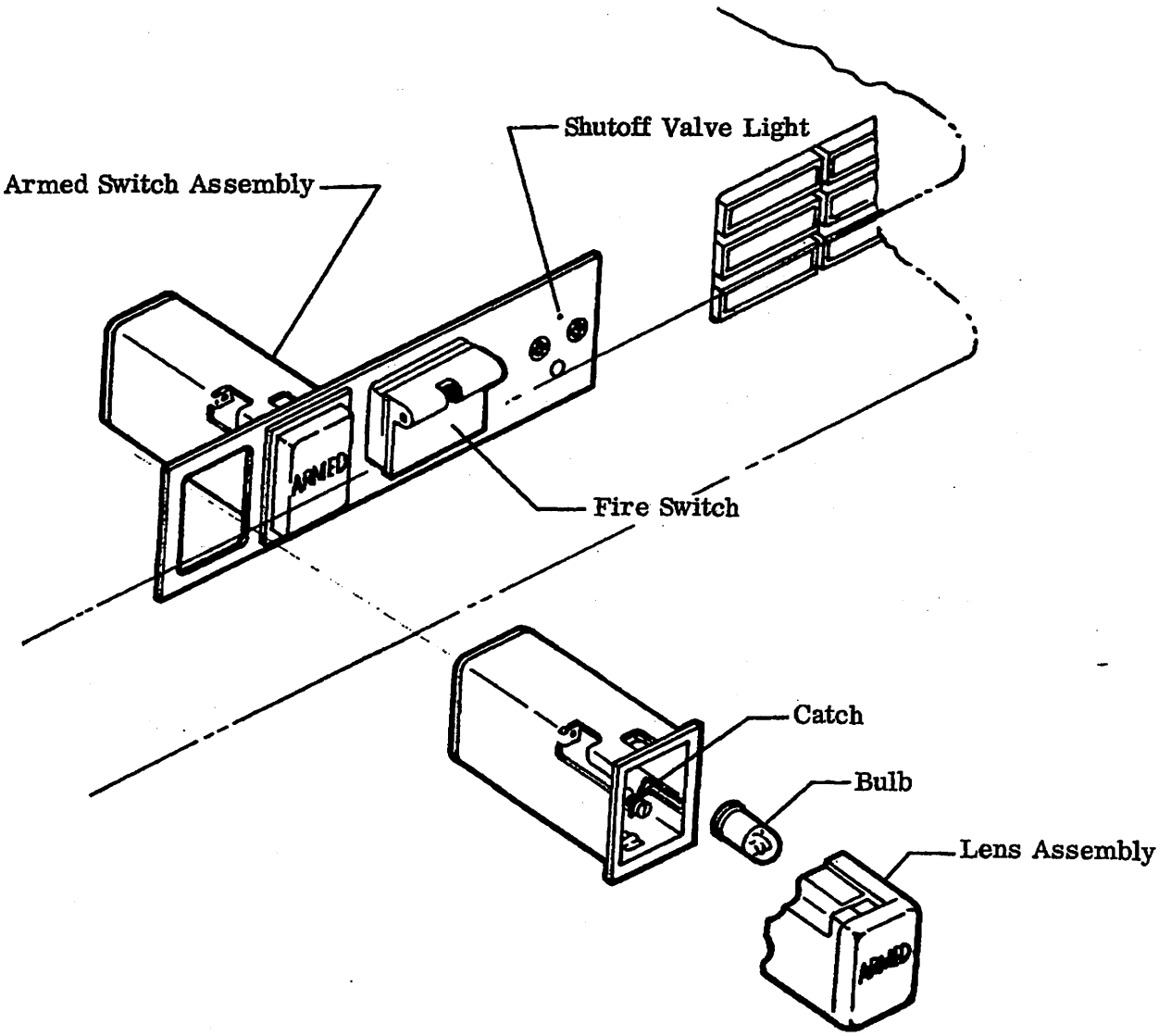
Resistance Chart
Figure 202

EFFECTIVITY: WALTER KIDDE ELEMENTS

ARMED SWITCHES - MAINTENANCE PRACTICES

1. General
 A. A pair of ARMED Switches is located at each end of the glareshield warning light panel. These switches are the momentary push-on type.
 B. Maintenance practices of the ARMED Switches include light bulb replacement and removal and installation of the switch.

2. Maintenance Practices
 A. Replace ARMED Switch light bulbs as follows: (See figure 201)
 (1) Pull FIRE EXT circuit breaker.
 (2) Grasp lens portion of the switch and pull straight out. Lens will pull out of switch assembly.
 (3) Extract old bulb(s) and remove lens cap(s) (if installed). Install lens cap on new bulbs and install.
 (4) Press lens back into switch assembly.
 (5) Depress FIRE Switch. The red shutoff valve lights, just inboard of the FIRE Switch, will be lighted and both ARMED Switches should illuminate.
 (6) Depress FIRE Switch. The red shutoff valve lights and the ARMED Switches will go out.
 (7) Reset FIRE EXT circuit breaker.
 B. Remove ARMED Switch as follows: (See figure 201)
 (1) Pull FIRE EXT circuit breaker.
 (2) Grasp lens portion of the switch and pull straight out. Lens will pull out of switch assembly.
 (3) Using a small screwdriver turn the screw, just inside of the switch bezel, counterclockwise until catch rotates inside of switch.
 (4) Pull switch straight out and disconnect electrical wiring.
 C. Install ARMED Switch as follows: (See figure 201)
 (1) Connect electrical wiring to switch.
 (2) Rotate catch inside of switch and push switch into glareshield.
 (3) Rotate screw clockwise so that catch rotates out of the switch. Tighten screw.
 (4) Press lens into switch assembly.
 (5) Depress FIRE Switch. The shutoff valve lights, just inboard of the FIRE Switch will be lighted and both ARMED Switches should illuminate.
 (6) Depress FIRE Switch. The red shutoff valve lights and the ARMED Switches will go out.
 (7) Reset FIRE EXT circuit breaker.



Armed Switch Installation
Figure 201

FIRE SWITCH - MAINTENANCE PRACTICES

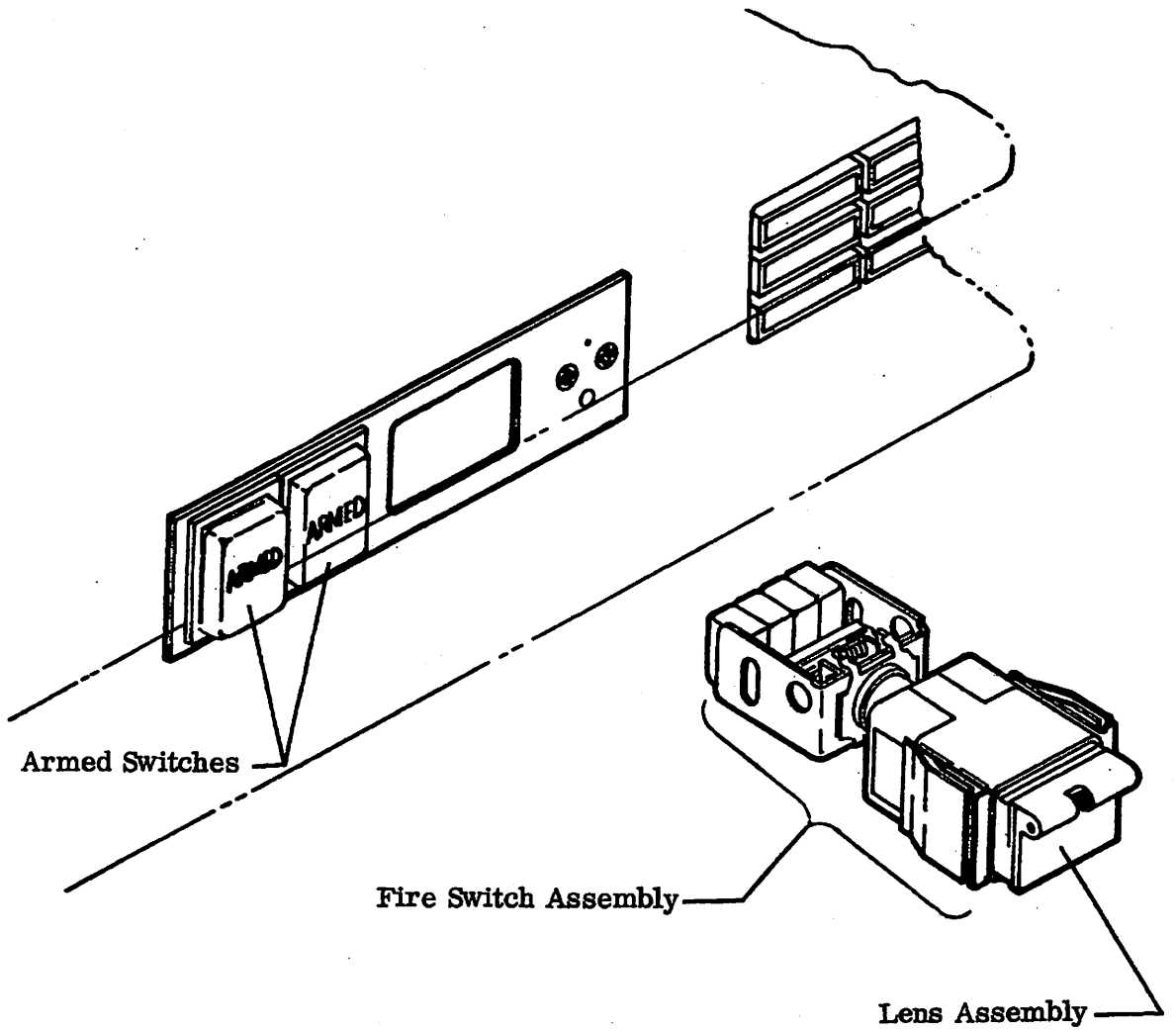
1. General
 A. A FIRE Switch is located adjacent (inboard of each pair of ARMED Switches to the left and right of the glareshield warning lights.
 B. Light bulb replacement is accomplished by sliding the cover off the switch and pulling straight on the lens.

 WARNING: WHEN WORKING WITH THE FIRE SWITCHES USE EXTREME CARE NOT TO DEPRESS EITHER OF THE ARMED SWITCHES.

2. Removal/Installation
 A. Remove Fire Switch (See figure 201)
 (1) Lower tailcone access door and disconnect aircraft batteries.
 (2) Pull both fire extinguisher circuit breakers.
 (3) Remove metal panel on under side of glareshield, and disconnect wiring from switch assembly.

 NOTE: The entire switch assembly consists of a housing which contains the bulbs, lens and connections for the light wiring. A switch module attached to the end of the housing by spring clips completes the switch assembly.

 (4) Insert a small screwdriver under edge of switch and pry out on switch assembly and remove switch assembly through front of glareshield.
 B. Install Fire Switch (See figure 201)
 (1) Insert switch assembly through opening in the front of the glareshield.
 (2) Connect electrical wiring to switch assembly.
 (3) Snap switch assembly into glareshield.
 (4) Install metal plate beneath glareshield and secure with attaching parts.
 (5) With fire extinguisher circuit breakers pulled, connect aircraft batteries.
 (6) Check that both ARMED Switches and the shutoff valve indicator light (pinhead light adjacent to the FIRE Switch) are illuminated.
 (7) Depress FIRE Switch ARMED Switches and the shutoff valve light will go out.
 (8) Reset FIRE EXT circuit breaker.
 (9) Secure tailcone access door.



Fire Switch Installation
Figure 201

DETECTION CONTROL UNITS - MAINTENANCE PRACTICES

1. General

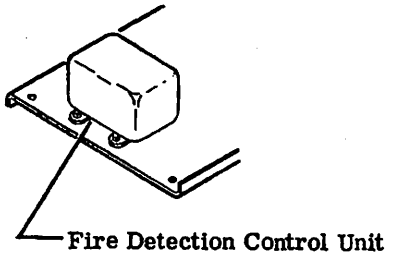
A. The fire detection control units are installed on the RH and LH electrical equipment trays in the tailcone. The LH control unit is located on the LH electrical equipment tray. The RH control unit is located on the RH electrical equipment tray.

2. Removal/Installation

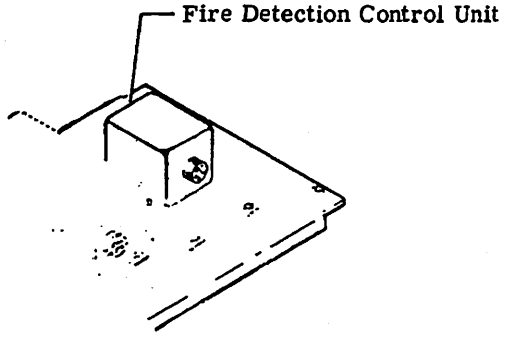
NOTE: The following removal and installation procedures are identical for both control units.

A. Remove Fire Detection Control Units
 (1) Lower tailcone access door.
 (2) Disconnect aircraft batteries.
 (3) Disconnect electrical plug from applicable control unit.
 (4) Loosen and remove attaching parts and control unit from equipment tray.

B. Install Fire Detection Control Unit
 (1) Install control unit and secure with attaching parts.
 (2) Connect electrical plug to control unit.
 (3) Connect aircraft batteries.
 (4) Raise and secure tailcone access door.



RH ELECTRICAL EQUIPMENT TRAY



LH ELECTRICAL EQUIPMENT TRAY

Engine Fire Detection Control Unit Installation
Figure 201

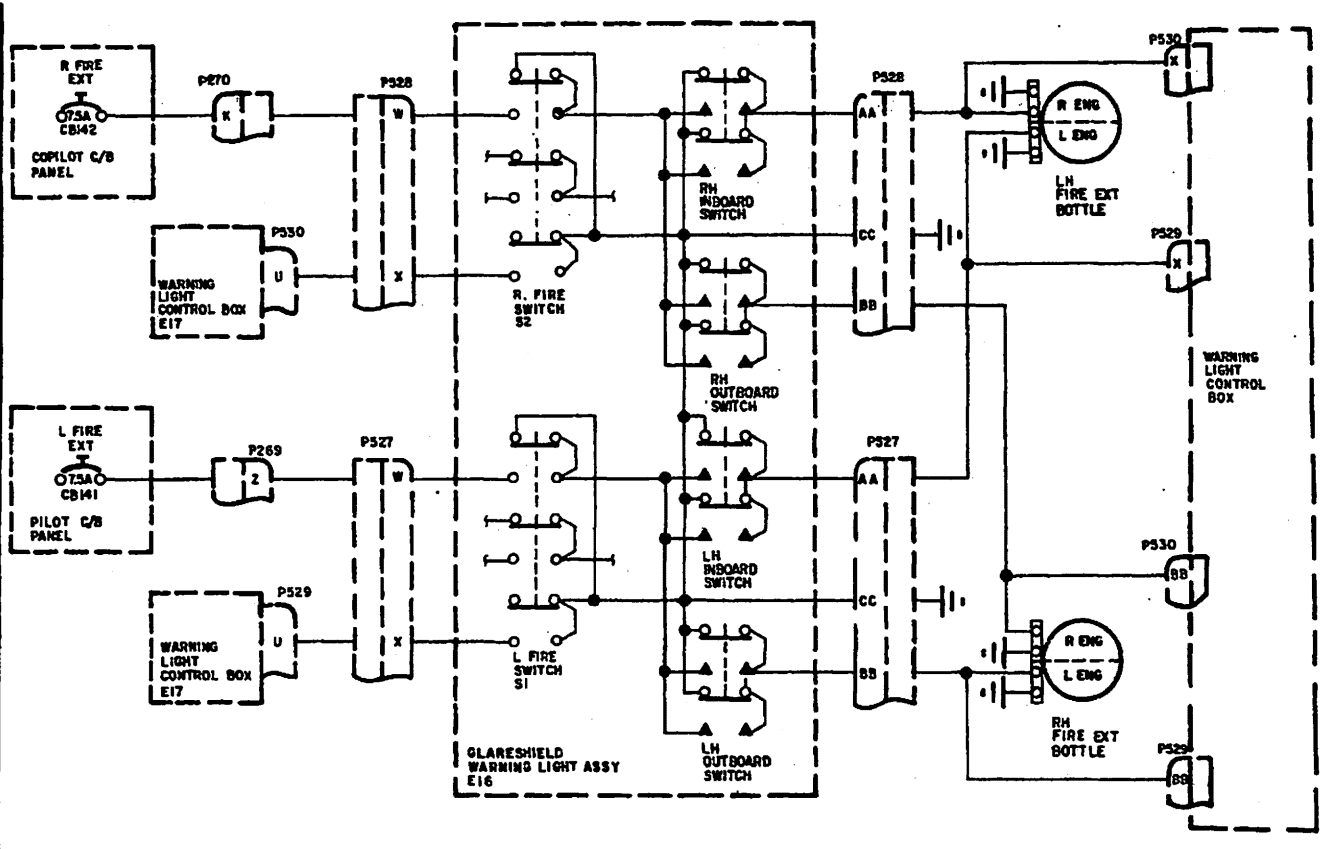
EXTINGUISHING - DESCRIPTION AND OPERATION

1. General
 A. Aircraft fire extinguishing consists of a portable, hand-held fire extinguisher for cabin use and an engine fire extinguishing system.
 B. The engine fire extinguishing system, installed in the tailcone equipment section, provides fire extinguishing capabilities for each engine nacelle. The system consists of the following: two containers, a thermal discharge indicator, a manual discharge indicator, push-button type switches, and two two-way check valves. Access to the fire extinguishing system is through the tailcone access door. A periodic check should be made to assure that container pressure is maintained at a normal operating range.

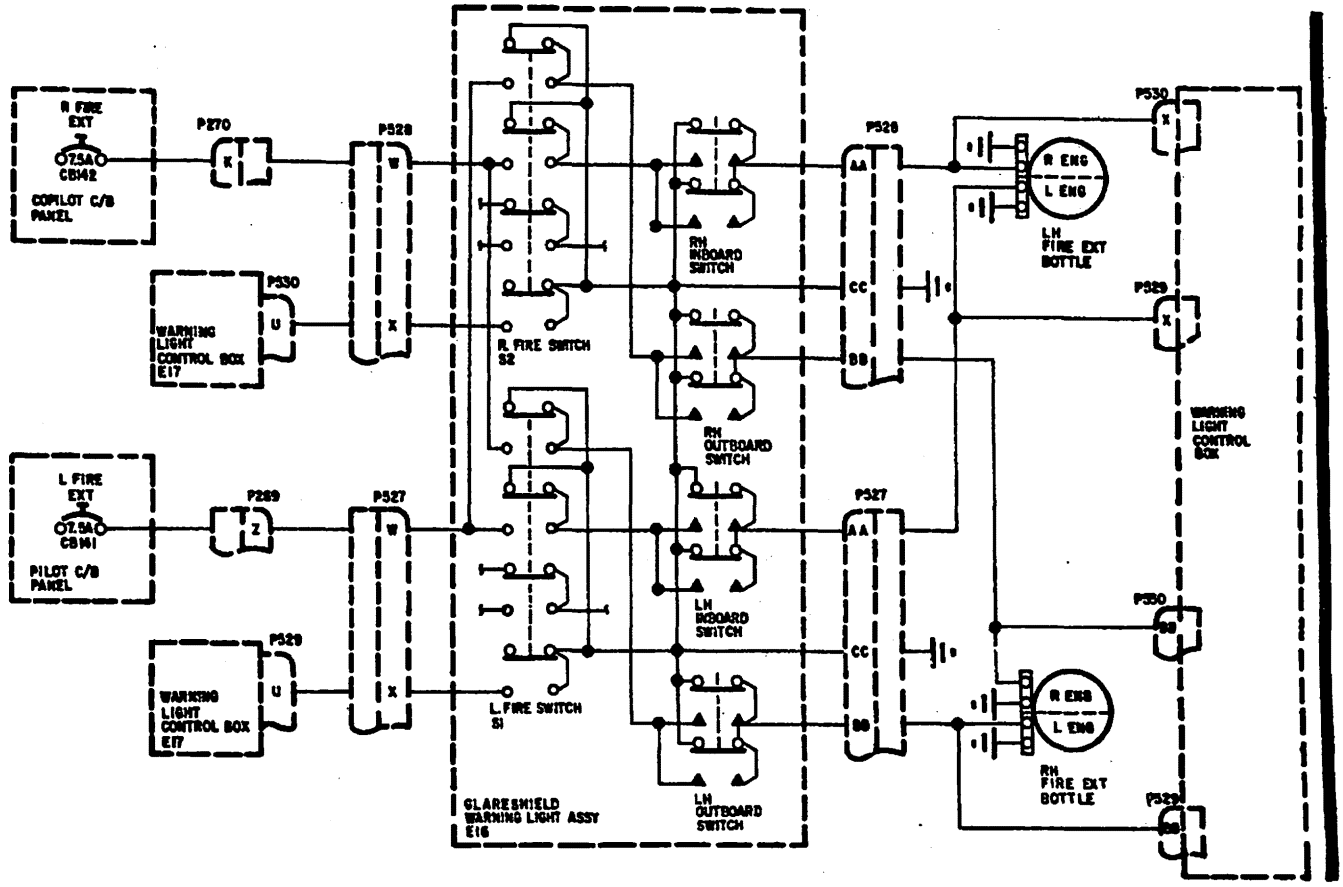
2. Operation (See figures 1 and 2)
 A. Depressing the left FIRE Switch closes the left engine main fuel and hydraulic shutoff valves and energizes and lights the two ARMED switches adjacent to the FIRE Switch and the shutoff valve indicator light (pinhead light adjacent to the FIRE Switch). Depressing the inboard ARMED Switch (switch light will go out) applies 28 vdc to the applicable cartridge on the left container. On Walter Kidde fire extinguishers the exploding cartridge ruptures the container seal and releases the charge of extinguishing agent to the left nacelle. On American Standard fire extinguishers, the exploding cartridge breaks a housing which mechanically holds a piston-type seal. The seal is blown out by bottle pressure releasing extinguishing agent to the left nacelle. A two-way check valve installed in the plumbing between the containers prevents the charge from entering the second container. If a second charge of extinguishing agent is required, the remaining ARMED switch is depressed thereby exploding the applicable cartridge in the right container, releasing the extinguishing agent charge to the left nacelle.

 NOTE: This procedure describes operation of the fire extinguishing system for the left nacelle. Operation of the system for the right nacelle is identical.

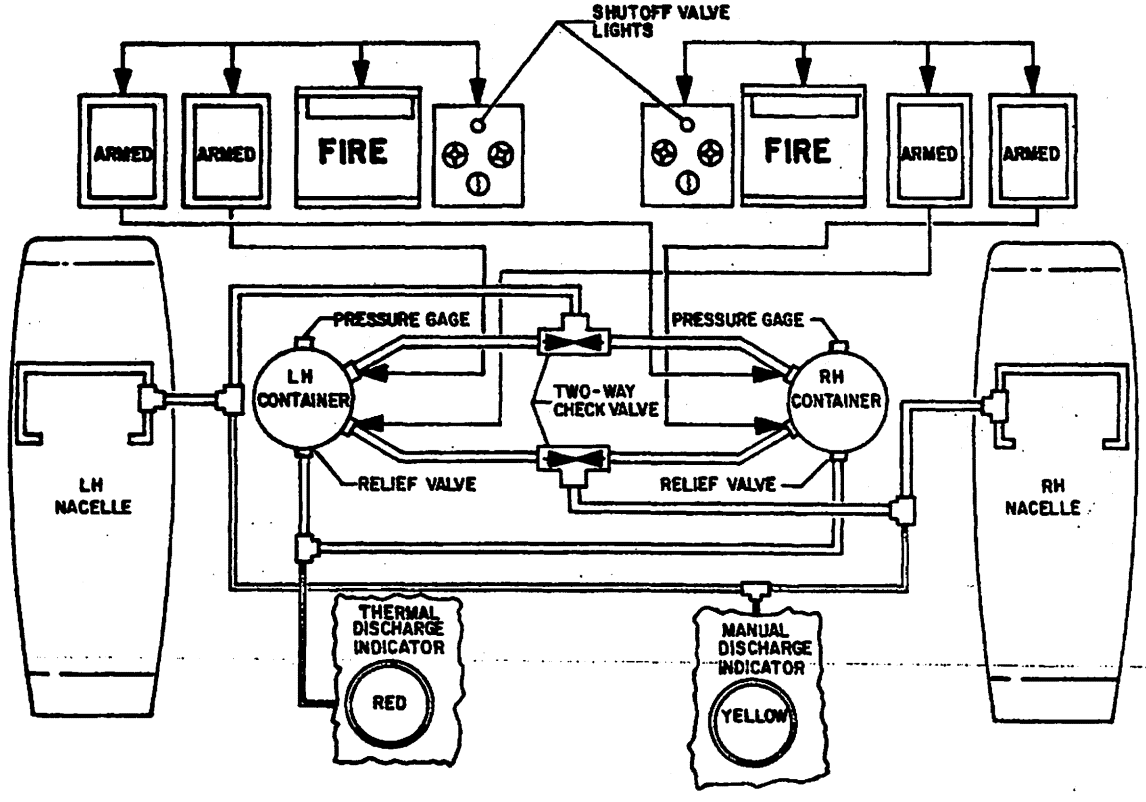
 B. The thermal discharge valve, one located in each bottle, is designed to relieve bottle pressure when bottle temperature reaches 102.8°C (217°F).



Engine Fire Extinguisher Electrical Control Schematic
Figure 1 (Sheet 1 of 2)



Engine Fire Extinguisher Electrical Control Schematic
Figure 1 (Sheet 2 of 2)



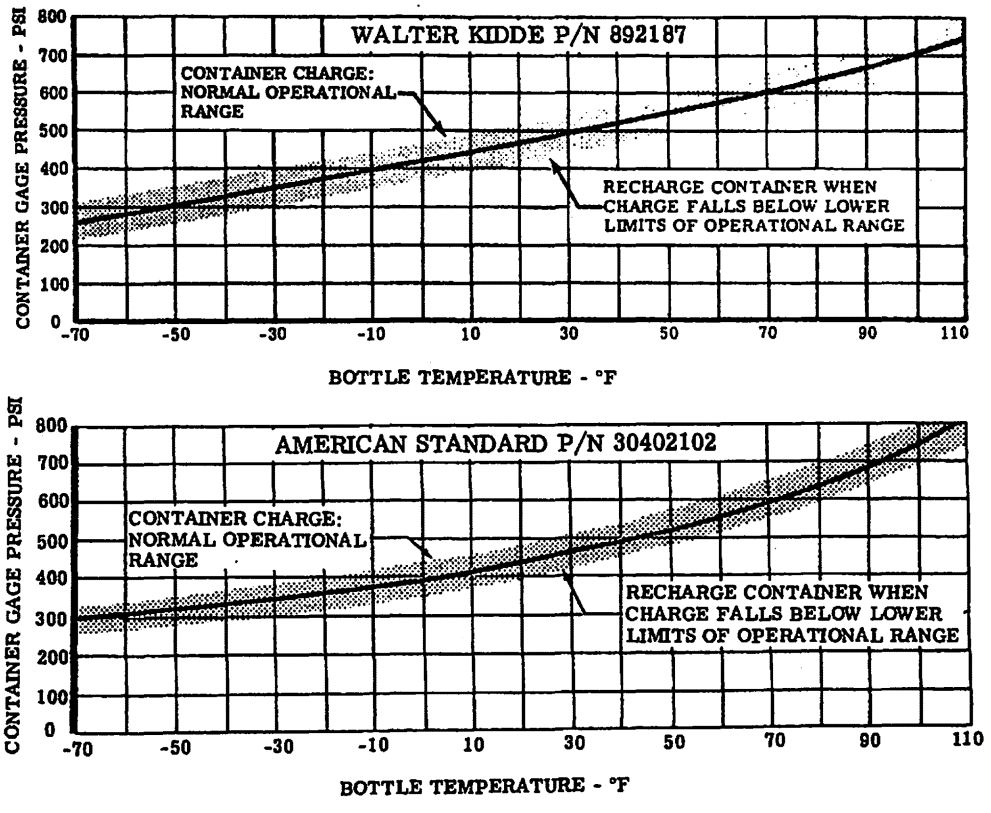
Engine Fire Extinguisher System Schematic
Figure 2

EFFECTIVITY: ALL

EXTINGUISHING - MAINTENANCE PRACTICES

1. General
 A. The fire extinguisher container must be removed and a weight check performed in accordance with the time interval specified in 5-10-03. The container should conform with manufacturer's weight as indicated by container placard. If container weight does not conform, the container should be replaced.

2. Inspection/Check
 A. A periodic check should be made to assure that container pressure is maintained at a normal operating range. A pressure gage mounted on each container indicates the psi charge of the container. See figure 201 for normal operating range.



Fire Extinguishing Container Normal Operating Range
Figure 201

EXTINGUISHER CONTAINER - MAINTENANCE PRACTICES

1. General
 A. Two engine fire extinguisher containers are installed in the tailcone equipment section. The containers are charged with CF_3 BR (monobromotrifluromethane) extinguishing agent to a pressure of 600 psi. The CF_3 BR extinguishing agent is noncorrosive; therefore no special cleaning of the engine or nacelle is required in the event the system has been used. The containers, plumbed to each engine nacelle, provide the aircraft with a two-shot system. The containers will fully discharge in 1 to 2 seconds. A pressure gage mounted on each container indicates the pressure charge of the container. The aircraft will have either a Walter Kidde or an American Standard container.
 B. Fire extinguisher containers are located in the tailcone and are accessible through the tailcone access door.
 C. Removal and installation procedures are identical for both left and right containers.
 D. Removal of American Standard and Walter Kidde containers is identical; however, installation is different.

2. Removal/Installation
 A. Remove Container (Typical) (See figure 201.)
 (1) Set Battery Switch(es) to OFF.
 (2) Lower tailcone access door.
 (3) Disconnect battery quick-disconnects.

 WARNING: WHEN REMOVING A FULLY CHARGED CONTAINER ASSEMBLY, INSTALL AN929-16 CAPS ON VALVE OUTLETS AND CONNECT A GROUND WIRE FROM ELECTRICAL CONNECTORS TO THE GROUNDING LUGS ON THE VALVE ASSEMBLIES. USE EXTREME CARE TO AVOID STRIKING THE CONTAINER SEAL OR ALLOWING THE CARTRIDGE IN THE VALVE ASSEMBLY TO COME IN CONTACT WITH AN ELECTRICAL POWER SOURCE.

 (4) Disconnect electrical wiring from container valve assemblies and connect grounding jumpers between valve assemblies electrical terminals and grounding lugs. (Refer to figure 201, 26-20-02.)
 (5) Disconnect plumbing from valve assemblies and install AN929-16 caps on valve outlets.
 (6) Remove mounting bolts from container bracket.
 (7) Remove container assembly from aircraft.
 (8) Store container at temperatures below 100°F (preferably 70°F).

B. Install Container (Typical) (See figure 201.)

CAUTION: THE FIRE SWITCHES ARE DOUBLE ACTION, PUSH TO ACTIVATE SWITCHES WHICH APPLY OR REMOVE POWER TO THE ARMED SWITCHES. DEPRESS FIRE SWITCH AND EXTINGUISH LIGHT PRIOR TO FIRE EXTINGUISHER CONTAINER INSTALLATION. FAILURE TO DO SO WILL CAUSE THE CONTAINER TO DISCHARGE IF THE ARMED SWITCH IS DEPRESSED AFTER POWER IS RETURNED TO THE AIRCRAFT.

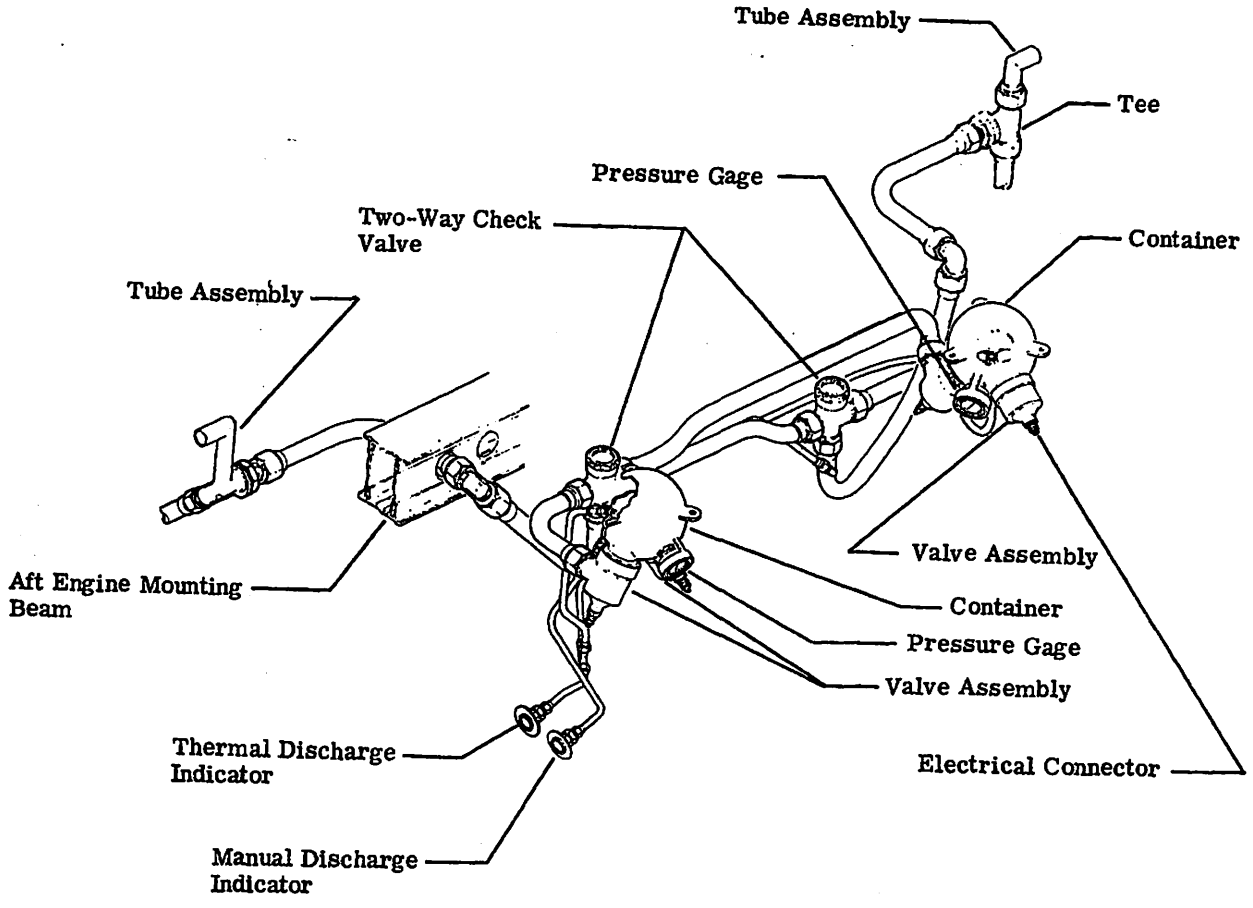
(1) Reset the ARMED Switches as follows:
 (a) Pull both right and left FIRE EXT circuit breakers.
 (b) With aircraft batteries connected, depress the right and left FIRE Switches. The shutoff valve indicator light and all four ARMED switches should be lighted.
 (c) Set Battery Switch(es) to OFF and wait for relay to disengage (approximately 2 minutes).
 (d) Set Battery Switch(es) to ON and the four ARMED lights will light.
 (e) Depress each FIRE Switch and the ARMED lights will go out.
 (f) Disconnect battery quick-disconnects.

WARNING: NEW CONTAINERS, VALVE ASSEMBLIES AND CARTRIDGES ARE SHIPPED SEPARATELY TO PREVENT THE POSSIBILITY OF ACCIDENTAL CONTAINER DISCHARGE. IF A NEW COMPONENT IS TO BE INSTALLED, DO NOT INSTALL CARTRIDGE INTO THE VALVE ASSEMBLY UNTIL THE VALVE IS TO BE ASSEMBLED ON THE CONTAINER.

(2) Position container on bracket and secure with mounting bolts.

CAUTION: ON AMERICAN STANDARD CONTAINERS, DO NOT LOOSEN THE 1-1/4" HEX OF THE HOUSING ASSEMBLY IN ORDER TO ROTATE THE OUTLET. THE OUTLETS WILL ROTATE WITHOUT LOOSENING THE 1-1/4" HEX AND WILL NOT AFFECT THE SEALS.

(3) Remove AN929-16 caps from valve outlets and connect plumbing.
(4) Remove ground wire from connector and connect wiring to valve assembly in accordance with applicable wiring diagram.
(5) Connect battery quick-disconnects.



Fire Extinguisher Container Installation
Figure 201

EXTINGUISHER CONTAINER CARTRIDGE - MAINTENANCE PRACTICES

1. General
 A. Replace fire extinguisher cartridges at three year intervals unless the extinguisher has been used.
 B. Removal and installation is identical for both outlets on both containers.
 C. Removal and installation of American Standard and Walter Kidde cartridges is different; therefore, two procedures have been provided.

2. Removal/Installation
 A. Remove Cartridge (Walter Kidde) (See figure 201)
 (1) Remove all aircraft electrical power.
 (2) Lower tailcone access door.
 (3) Disconnect battery quick-disconnects.

 WARNING: AFTER DISCONNECTING THE ELECTRICAL WIRING FROM CONTAINER VALVE ASSEMBLY, CONNECT A GROUND WIRE FROM ELECTRICAL CONNECTOR TO GROUNDING LUG OF VALVE ASSEMBLY.

 (4) Disconnect electrical wiring from container valve assembly and connect ground to electrical connector and grounding lug.
 (5) Loosen valve assembly nut with a strap wrench and disconnect plumbing from valve assembly.
 (6) Remove valve assembly from container.
 (7) Use socket wrench and unscrew cartridge from valve assembly.
 (8) Dispose of old cartridge by firing into a fixture specifically designed for that purpose or dispose of cartridge in accordance with local regulations governing disposition of Class "C" explosives.
 (9) Check electrical contact assembly and connector for condition.
 B. Install Cartridge (Walter Kidde) (See figure 201)

 WARNING: DO NOT INSTALL CARTRIDGE IN VALVE ASSEMBLY UNTIL VALVE ASSEMBLY IS TO BE ASSEMBLED TO THE CONTAINER IN PREPARATION FOR USE.

 WARNING: DO NOT INTERCHANGE CARTRIDGES ONCE THEY HAVE BEEN INSTALLED IN THE VALVE ASSEMBLY.

 (1) Remove protective cap from new cartridge P/N 841155.
 (2) Apply MIL-L-7711 grease to cartridge threads and insert cartridge into valve assembly. Torque cartridge 150 to 200 inch-pounds.
 (3) Replace O-ring and position valve assembly outlet to the plumbing fitting. Install valve assembly to container and torque valve assembly nut to 75 foot-pounds.

(4) Connect plumbing fitting to valve assembly.

WARNING: WHEN CHECKING CONTINUITY OF CARTRIDGE CIRCUIT, DO NOT USE TESTING EQUIPMENT THAT EXCEEDS 0.035 AMPERES.

(5) Remove grounding wire and test cartridge circuit for continuity using a testing circuit that does not exceed 0.035 amperes.
(6) When continuity of the cartridge is obtained, connect wire to connector in accordance with applicable wiring diagram.
(7) Connect battery quick-disconnects.
(8) Secure tailcone access door.

C. Remove Cartridge (American Standard) (See figure 201)
(1) Remove all aircraft electrical power.
(2) Lower tailcone access door.
(3) Disconnect battery quick-disconnects.

WARNING: AFTER DISCONNECTING ELECTRICAL WIRING FROM CARTRIDGE ASSEMBLY, CONNECT A GROUND WIRE FROM THE ELECTRICAL CONNECTOR ON THE CARTRIDGE TO THE GROUNDING LUG ON THE OUTLET CASTING.

(4) Disconnect electrical wiring from cartridge and connect a ground wire from the electrical connector on the cartridge to the grounding lug on the outlet casting.

CAUTION: DO NOT ALLOW THE 1-1/4" HEX HEAD OF THE HOUSING ASSEMBLY TO TURN, OTHERWISE CONTAINER DISCHARGE WILL OCCUR.

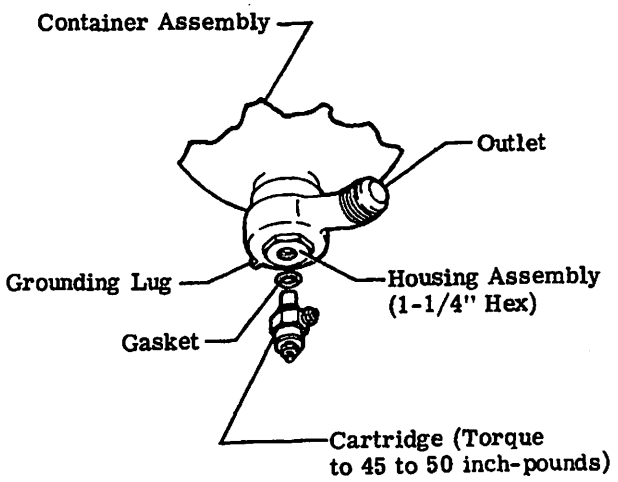
(5) Using a 1-1/4" wrench, hold the hex head of the housing assembly and loosen the cartridge using care not to turn the housing assembly.
(6) Unscrew the cartridge from the housing assembly and remove the gasket.
(7) Dispose of old cartridge by firing into a fixture specifically designed for that purpose or dispose of cartridge in accordance with local regulations governing disposition of Class "C" explosives.

D. Install Cartridge (American Standard P/N 30402102)
(1) Remove protective cap from new cartridge P/N 13083-5.
(2) Apply DC-55 lubricant (Dow Corning Corp.) or equivalent to cartridge threads. Install cartridge using new gasket P/N AN6290-5. Be sure to hold the 1-1/4" hex on the housing assembly to avoid over torquing of the housing assembly.

(3) Torque the cartridge to 45 to 50 inch-pounds while holding the 1-1/4" hex.

WARNING: WHEN CHECKING CONTINUITY OF A CARTRIDGE CIRCUIT DO NOT USE A VOLT-OHMMETER, BATTERY POWERED CONTINUITY LIGHT OR ANY SIMILAR DEVICE IN AN ATTEMPT TO TEST CARTRIDGE CONTINUITY. USE OF TEST DEVICES WHICH PASS MORE THAN 30 MA MAY DETONATE THE CARTRIDGE OR AFFECT ITS USEFUL LIFE.

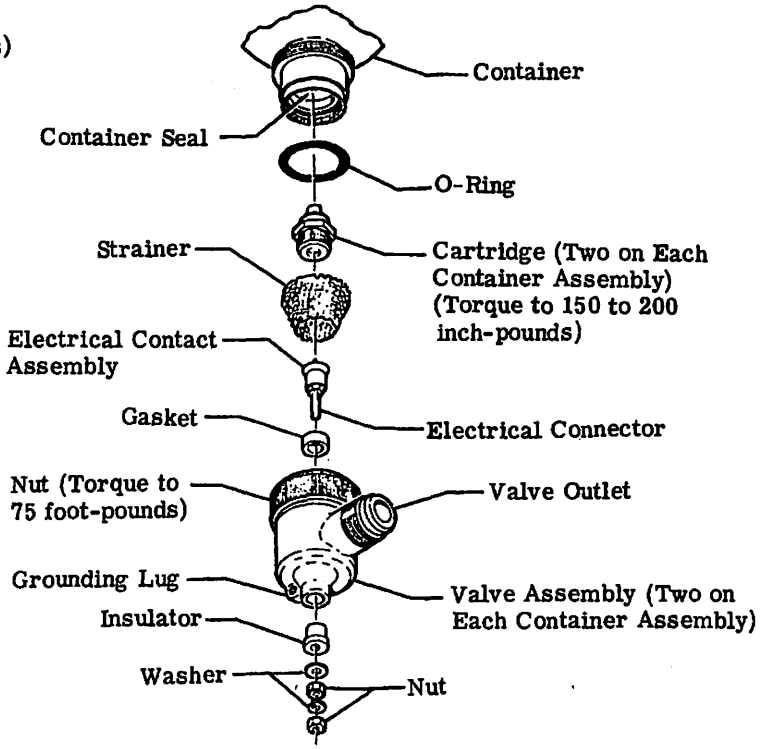
(4) Remove grounding wire and test cartridge for continuity using a testing circuit that does not exceed more than 30 MA.
(5) When continuity is verified, connect wire to studs in accordance with applicable wiring diagram.
(6) Safety wire cartridge hex to outlet casting.
(7) Connect battery quick-disconnects.
(8) Secure tailcone access door.



Assembly P/N 30402102 (Includes Charged Container and Cartridges)

Cartridge P/N 13083-5

AMERICAN STANDARD



Assembly P/N 892187 (Includes Charged Container, Valves and Cartridges)

Container (Charged) P/N 893640

Valve P/N 891086

Cartridge P/N 841155

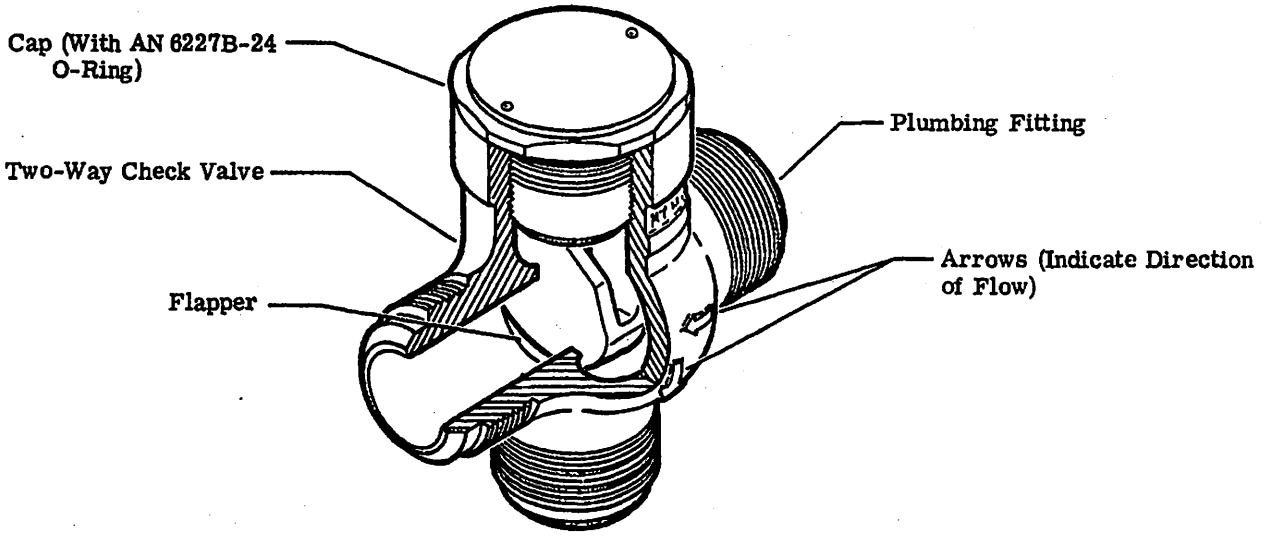
WALTER KIDDE

Fire Extinguisher Container Cartridge Installation
Figure 201

FIRE EXTINGUISHER TWO-WAY CHECK VALVE - MAINTENANCE PRACTICES

1. General
 A. There are two two-way check valves installed in the fire extinguisher system that prevent the extinguisher charge from entering the opposite container if one container is discharged. Arrows visible on the outside of the check valve assembly indicate the direction of flow through each of the three ports. The valve assembly has a flapper that blocks flow in the opposite direction. A spring holds the flapper in a centered position that permits the plumbing to vent when the system is not in operation.

2. Removal/Installation
 A. Removal and installation procedures are basically disconnecting the plumbing from the check valve and removal of valve.



Two-Way Check Valve
Figure 201